

CONTROL OF AND ACCESS TO NUCLEAR WEAPON DATA

The DOE seal will be placed here
AFTER the Manual has been
signed.

U.S. DEPARTMENT OF ENERGY
National Nuclear Security Administration

CONTROL OF AND ACCESS TO NUCLEAR WEAPON DATA

1. PURPOSE. This Department of Energy (DOE) Manual establishes procedures and provides direction for the physical control and dissemination of nuclear weapon data (NWD), including the following.
 - a. Procedures for the control of and access to the Sigma categories. (The Sigma categories previously covered under DOE 5610.2, *Control of Weapon Data*, dated 8-1-80, have been regrouped and redefined.)
 - b. Procedures for the newly established Sigma 20 category.
 - c. Procedures for marking, controlling, and protecting NWD in accordance with security requirements in the DOE 420, 450, 460, and 470 series of directives.
2. CANCELLATIONS. None.
3. APPLICABILITY.
 - a. DOE Elements. The requirements in this Manual apply to all elements of DOE and the National Nuclear Security Administration (NNSA) within the provisions and restrictions of Title 32 of the National Defense Authorization Act for fiscal year 2000, Public Law 106-65. (See Attachment 1.)
 - b. Site/Facility Management Contractors.
 - (1) The Contractor Requirements Document (CRD), Attachment 2, sets forth requirements of this Manual that will apply to site/facility management contractors whose contracts include the CRD.
 - (2) This CRD must be included in all site/facility management contracts that involve accessing, receiving, storing, processing, or disseminating NWD.
 - (3) This Manual does not automatically apply to other than site/facility management contractors. Any application of any requirements of this Manual to other than site/facility management contractors will be communicated separately from the Manual.
 - (4) Heads of Headquarters elements are responsible for telling contracting officers which site/facility management contractors are affected by this Manual. Once notified, contracting officers are responsible for incorporating the CRD into the contracts of affected site/facility management contractors via the laws, regulations, and DOE directives clause of the contracts.
 - (5) As the laws, regulations, and DOE directives clause of site/facility management contracts states, regardless of the performer of the work,

site/facility management contractors with a CRD incorporated into their contracts are responsible for compliance with the requirements of the CRD.

- a. Affected site/facility management contractors are responsible for flowing down the requirements of this CRD to subcontractors at any tier to the extent necessary to ensure the site/facility management contractors' compliance with the requirements.
 - b. Contractors must not unnecessarily or imprudently flow down requirements to subcontractors. That is, contractors will—
 - 1 ensure that they and their subcontractors comply with the requirements of the CRD and
 - 2 incur only costs that would be incurred by a prudent person in the conduct of competitive business.
 - c. Exceptions. None
 - d. Deviations. Deviations from the requirements in this Manual must be approved through procedures established in DOE O 471.X, *Control of and Access to Nuclear Weapon Data*, dated XX-XX-03.
4. SUMMARY. This Manual consists of four chapters, five appendixes, and a number of attachments. Chapter I covers the general responsibilities and requirements for protecting NWD. Chapter II explains Sigmas 1, 3, 3V (Visual), 4, 11, 12, and 13 NWD, including procedures for controlling and distributing it, and Chapter IV does the same for Sigma 20 NWD. Chapter III is reserved for future use. Appendix A is a matrix relating clearance level to NWD access, Appendix B is a table providing information on protecting the various categories of NWD, Appendix C has sample cover sheets for NWD, Appendix D is a list of acronyms used in this Manual, and Appendix E is a glossary of terms used. Attachment 1 lists DOE organizations to which this Manual is applicable, Attachment 2 is the CRD, Attachment 3 is a table with a history of the Sigma categories, and Attachment 4 provides the procedures for display vault access.
5. IMPLEMENTATION.
 - a. Implementation must be completed as soon as possible, consistent with contractual requirements.
 - b. For any new requirements imposed by this Manual that cannot be fully instituted within 1 year of publication of the Manual or within existing resources, an implementation plan must be developed and submitted to the Classified and Controlled Information Division at the NNSA Service Center within 6 months of publication of the Manual.

6. CONTACTS. Questions concerning this Manual should be directed to the Classified and Controlled Information Division at the NNSA Service Center.

BY ORDER OF THE SECRETARY OF ENERGY:

KYLE E. McSLARROW
Deputy Secretary

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SIGMA REORGANIZATION AND IDENTIFICATION

The following changes have occurred from the previously published Sigma (see Attachment 3).

- a. Sigmas 1 and 2 have been combined into Sigma 1.
- b. Sigmas 3 (excluding Sigma 3 Visual), 5, 9, and 10 have been combined into Sigma 3.
- c. Sigmas 4, 11, 12, and 13 remain unchanged.
- d. Sigma 20 has been added.

Sigmas 14 and 15 are addressed in DOE M 452.4-1, *Protection of Use Control Vulnerabilities and Designs*, dated 7-1-99.

The informal recognition and use of Sigma categories 6, 7, and 8 ended with the publication of DOE 5610.2 in August 1990. These Sigma category designations are not used in this Manual, the CRD or DOE O 471.X, *Control of and Access to Nuclear Weapon Data*, dated XX-XX-03.

Sigma category designations 16, 17, 18, and 19 are currently unused in this Manual, the CRD, and DOE O 471.X.

CHAPTER I. GENERAL RESPONSIBILITIES AND REQUIREMENTS

1. RESPONSIBILITIES.

- a. Chief, Defense Nuclear Security (DNS). Responsible for control of access to classified weapons information per the Atomic Energy Act, Chapter 12 (42 U.S.C. Sections 2161–2169), as redelegated through the Director of the National Nuclear Security Administration (NNSA) Service Center to the Manager of the Classified and Controlled Information Division (CCID).
- b. Deputy Administrator, Defense Programs, NNSA.
 - (1) Serves as senior technical advisor on nuclear weapon data (NWD) policy for the Administrator, NNSA.
 - (2) Designates the Assistant Deputy Administrator for Military Application and Stockpile Operations as the executive agent for Sigma 20 NWD.
- c. Assistant Deputy Administrator for Military Applications and Stockpile Operations.
 - (1) Designates the Sigma 20 Program Coordinator (Sigma 20 PC).
 - (2) In consultation with the Manager, CCID, approves or denies requests to deviate from requirements of this Manual, the CRD, and DOE O 471.X, *Control of and Access to Nuclear Weapon Data*, dated XX-XX-03, for Sigma 20 NWD and responds to the requester with an interim or final decision within 30 days after the request is received from the NNSA Service Center.
 - (3) In consultation with the Sigma 20 PC, approves requests for transfer of Sigma 20 NWD to addresses outside NNSA.
 - (4) In consultation with the Sigma 20 PC, approves requests from outside DOE and NNSA for access to Sigma 20 NWD.
- d. Manager, Classified and Controlled Information Division, NNSA Service Center.
 - (1) Manages the DOE/NNSA NWD program as delegated by the Chief, DNS.
 - (2) As the office of primary interest, maintains this Manual and DOE O 471.X on behalf of the Chief, DNS.
 - (3) Grants or denies waivers or deviation requests from the requirements of this Manual, the CRD, or DOE O471.X relating to Sigmas 1, 3, 3V, 4, 11, 12, and 13 materials and responds to the requester with an interim or final determination within 30 days of request receipt by the NNSA Service Center.

- (4) Recommends to the Assistant Deputy Administrator for Military Applications and Stockpile Operations whether to grant or deny requests for waiver or deviation from the requirements of this Manual, the CRD, or DOE O 471.X relating to Sigma 20 material within 30 days of receiving a request.
- (5) Approves Headquarters and contractor requests for documents verified as containing NWD from the Defense Technical Information Center (DTIC).
- (6) Develops and conducts programs to train employees on their NWD responsibilities.
- (7) Establishes and implements procedures for management oversight and periodic audits to evaluate the implementation status of this Manual, the CRD, and DOE O 471.X.
- (8) Coordinates with the DOE Office of Congressional Affairs for access to NWD by members of Congress and congressional staff and maintains a current list of approved NWD recipients in Congress.
- (9) Forwards NWD to recipients in Congress through the Office of Congressional Affairs. (NOTE: Transmittals to Congress must be coordinated through the Office of Congressional Affairs.)

NOTE: Transfer of Sigma 20 outside the NWC must have prior approval from the Assistant Deputy Administrator for Military Applications and Stockpile Operations.

- (10) Establishes special caveat marking criteria to be used for NWD in addition to the markings prescribed in DOE M 471.2-1C, *Classified Matter Protection and Control Manual*, dated 4-17-01 (or its successor).
- (11) Coordinates the life-cycle management of scientific and technical NWD information produced by the NWC with the Office of Scientific and Technical Information (OSTI) in accordance with the requirements in DOE O 241.1A, *Scientific and Technical Information Management*, dated 4-9-01 (or its successor).
- (12) Transmits to OSTI (Oak Ridge)—
 - (a) all requests for documents containing NWD from DTIC and
 - (b) requests for field-of-interest registers.

- (13) Grants or denies access to nuclear weapon display vaults for representatives of other Government agencies and their contractors, members of Congress and their staffs, and other non-DOE/non-NNSA requesters.
- (14) Using WDACS, provides authorization for the transfer of Sigma 1, 3, 4, 11, 12, or 13 NWD to personnel, Agencies and locations outside DOE and NNSA.

(NOTE: Sigma 3V access authorization does not allow the transfer of NWD.)

- (15) Authorizes, and documents in WDACS, access to Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD for DOE and NNSA employees and contractors who are visiting Agencies or locations that are both non-NWC and non-DoD.
- (16) Authorizes, and documents in WDACS, access to Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD for employees and contractors that are both non-DOE and non-DoD. Organizations that are both non-DOE and non-DoD include—
 - (a) Government agencies and their contractors,
 - (b) foreign governments and international organizations, and
 - (c) Congress and congressional staff.
- (17) In coordination with the Sigma 20 PC, authorizes access to Sigma 20 NWD for DOE and NNSA employees and contractors visiting non-NWC Agencies or locations.

e. Heads of Headquarters Elements.

- (1) Designate from each DOE or NNSA program Secretarial Office one or more Sigma Access Authorization Officials who will approve, and record in WDACS, access to Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD for employees and contractors under their jurisdiction.
 - (a) Each Sigma Access Authorization Official or designee must be a Federal employee at grade GS-15 or above.
 - (b) The Office of the Assistant Secretary of Defense for Nuclear Matters, DoD, acting as a Headquarters element, also will designate a Sigma Access Authorization Official.
- (2) Ensure the data in WDACS is correct and current for all personnel at DOE and NNSA Headquarters with access to any Sigma category NWD and for

personnel in DoD and non-NWC field elements who have authorized access to Sigma 20 NWD.

- (3) Notify contracting officers for each affected site/facility management contract that the CRD for this Manual (Attachment 2) is to be incorporated into site/facility management contracts under their jurisdiction.
- (4) Ensure that DOE and NNSA employees and contractors under their jurisdiction follow the requirements of this Manual, the CRD, and DOE O 471.X.
- (5) Coordinate access by, or transfer to, personnel outside DOE and NNSA of Sigmas 1, 3, 4, 11, 12, and 13 NWD with the Manager, CCID, *before* transfer takes place.
- (6) Coordinate the transfer of Sigma 14 NWD outside NNSA with the UCPC to obtain the approval of the Assistant Deputy Administrator for Military Application and Stockpile Operations *before* transfer takes place.
- (7) Coordinate the transfer of Sigma 20 NWD outside DOE and NNSA with the Sigma 20 PC to obtain the approval of the Assistant Deputy Administrator for Military Application and Stockpile Operations *before* transfer takes place.
- (8) Ensure that documents in their custody containing Sigma 1, 3, 4, 11, 12, or 13 NWD are transmitted to other DOE or NNSA entities only after it is verified that the recipient has—
 - (a) valid need to know,
 - (b) appropriate security clearance,
 - (c) access authorization for the appropriate Sigmas as documented in WDACS, and
 - (d) appropriate site clearance and storage capability is recorded in the Safeguards and Security Information Management System.

f. NNSA Headquarters Sigma 20 Program Coordinator (Sigma 20 PC).

- (1) Serves as the program coordinator for implementation of the requirements of this Manual, the CRD, and DOE O 471.X pertaining to Sigma 20 NWD.
- (2) Serves as point of contact for interaction involving Sigma 20 NWD with organizations and Agencies outside NNSA.

- (3) Confirms, in writing, nominations of DOE and NNSA Sigma 20 Site Coordinators (Sigma 20 SCs).
- (4) Maintains a current listing of Sigma 20 SCs and periodically distributes a consolidated listing to the Sigma 20 SCs and others, as required.
- (5) Ensures that WDACS data is correct and current for DOE and NNSA Headquarters personnel and for non-DOE/non-NNSA personnel that have authorized access to Sigma 20 NWD.
- (6) Serves as point of contact for Sigma 20 NWD handling issues.
- (7) Develops policy and procedures in coordination with the Manager, CCID, and other appropriate organizations to consistently identify, categorize, and protect Sigma 20 NWD.
- (8) Ensures DOE and NNSA Headquarters compliance with these procedures.
- (9) Ensures that all personnel who have authorized access to Sigma 20 NWD have sufficient training, awareness, and knowledge of procedures for protecting such information.
- (10) Develops a written plan and memorandums of agreement for implementing these procedures at DOE Headquarters.
- (11) Coordinates the Assistant Deputy Administrator for Military Application and Stockpile Operations' approval of access to and/or transfer of Sigma 20 NWD to DoD and other Government agencies, and documents this approval in WDACS.
- (12) Approves access to Sigma 20 NWD for—
 - (a) DOE and NNSA Headquarters employees and contractors,
 - (b) non-NNSA Departmental field personnel, and
 - (c) DOE or NNSA personnel in organizations that do not have a Sigma 20 SC.

g. Heads of Field Elements (DOE/NNSA/DoD).

- (1) Designate from each field element one or more Sigma Access Authorization Officials who will approve, and record in WDACS, access to Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD for employees and contractors under their jurisdiction.

- (a) Each Sigma Access Authorization Official or designee must be a Federal employee at grade GS-15 or above or equivalent.
 - (b) Heads of major commands, DoD, acting as field elements, also will designate Sigma Access Authorization Officials.
 - (2) Ensure the data in WDACS is correct and current for all personnel under their jurisdiction who have authorized access to Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD.
 - (3) Ensure that employees and contractors under their jurisdiction can identify NWD in documents and verify that they are marked properly.
 - (4) Ensure that NWD is disseminated only to individuals with appropriate clearances, Sigma access authorizations, and valid needs to know.
 - (5) Forward Sigma 20 SC nominations to the Headquarters Sigma 20 PC and maintain copies of confirmation letters.
 - (6) Coordinate with OSTI to provide appropriate life-cycle management of scientific and technical NWD produced under their jurisdiction in accordance with the requirements DOE O 241.1A.
- h. Sigma 20 Site Coordinators.
- (1) Serve as points of contact for Sigma 20 NWD handling issues.
 - (2) Coordinate procedures with knowledgeable classification authorities (the local classification office or CCID) to identify and categorize Sigma 20 NWD consistently.
 - (3) Coordinate site plans with appropriate field organizations and the Sigma 20 PC.
 - (4) Ensure site compliance with plans and procedures.
 - (5) Support the reporting process for lost or compromised Sigma 20 documents in accordance with DOE N 471.3 or its successor and notify the Sigma 20 PC.
 - (6) Coordinate with the Sigma 20 PC to authorize access to Sigma 20 NWD for DOE and NNSA employees and contractors at their sites.
 - (7) Coordinate with the Sigma 20 PC for authorization to transfer Sigma 20 NWD to personnel, Agencies, and locations outside DOE and NNSA.

- (8) Ensure that personnel authorized to access Sigma 20 NWD have sufficient training, awareness, and knowledge of procedures for protecting information.
- (9) Ensure that WDACS data is correct and current for all site personnel who have authorized access to Sigma 20 NWD.
- i. Managers of NNSA Headquarters and Site Offices. In addition to the responsibilities and authorities described in paragraphs 5e and 5g, above, authorize access to weapon vaults located at their sites for DOE/NNSA personnel and contractor staff that have appropriate clearances, confirmed Sigma access authorizations, and valid needs to know.

NOTE: The authority to authorize access to weapon vaults may be re-delegated in writing to a limited number of contractor senior management at the site.

- j. Director, Office of Scientific and Technical Information, Oak Ridge.

NOTE: OSTI is part of the Office of Science, not a DOE/NNSA organization and not part of the NWC per DOE 5600.1, *Management of the Department of Energy Weapon Program and Weapon Complex*, dated 6-27-79, or 50 U.S.C. 2471. For the purposes of NWD and scientific and technical information management and control, OSTI has the same access privileges as organizations that are part of NNSA.

- (1) Collects and maintains a repository for scientific and technical NWD information originated by DOE/NNSA offices and their contractors and by DoD offices and their contractors (if the DoD information is pertinent to DOE/NNSA national defense missions).
- (2) Provides abstracting and indexing services for scientific and technical NWD.
- (3) Maintains computerized NWD databases, which are made available to authorized users through approved and accredited remote encrypted telecommunications links (e.g., National Security Agency Types I and II).
- (4) Coordinates with CCID requests from site offices and their contractors to establish field-of-interest registers of NWD documents obtained from DTIC.
- (5) Arranges to obtain NWD documents from DTIC for authorized DOE/NNSA personnel.
- (6) Establishes a field-of-interest register for NWD documents that DOE/NNSA requests from DTIC.

- (7) With approval from CCID and others, authorizes access to NWD and transmits NWD documents from OSTI's custody to Departmental offices and their contractors and to other Government agencies and their contractors in accordance with requirements of this Manual.
- (8) Assists CCID in implementing policies and procedures for the management of Department-sponsored scientific and technical information containing NWD.

NOTE: Policy for the OSTI/DTIC database management agreement falls under the auspices of the Joint Coordinating Committee.

k. Sigma Access Authorization Officials.

- (1) Document site employees and contractors who have been authorized access to Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD, and confirm that they have—
 - (a) appropriate clearances and
 - (b) needs to know validated by appropriate officials.
- (2) Ensure that WDACS data is correct and current for site employees and contractors that are authorized access to Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD.
- (3) Ensure that site employees and contractors who are authorized access to Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD have sufficient training, awareness, and knowledge of procedures for protecting NWD.

l. Persons Authorized Sigma Access. Will disseminate or distribute NWD only to personnel with the appropriate clearances, Sigma access authorizations, and validated needs to know in accordance with the requirements of this Manual, the CRD, and DOE O 471.X.

NOTE: DOE and NNSA personnel authorized Sigma access for Sigma 1, 3, 3V, 4, 11, 12, or 13 NWD may authorize initial access to one or more of the Sigma categories that they are authorized to access for DOE or NNSA personnel with the appropriate clearances and validated needs to know but must report this initial access to the Sigma Access Authorization Official of the organization authorizing the initial access for entry into WDACS within 1 business day after approving access.

m. Contracting Officers. Following notification from the responsible DOE or NNSA program Secretarial Office, incorporate the CRD into affected site/facility management contracts via the laws, regulations, and DOE directives clause of the contracts.

2. REQUIREMENTS.

- a. After the approval date of this Manual and DOE O 471.X, all NWD must be marked with the appropriate Sigma category as specified in this Manual and in DOE O 471.X. This includes NWD data that—
 - (1) originated in DOE or NNSA,
 - (2) is identified and/or retained in any DOE or NNSA organization, or
 - (3) is transmitted to another Government department or agency, a non-Government organization, or a Government contractor.
- b. The following exceptions apply.
 - (1) NWD that is inactive when this Manual is approved does not require review or re-marking for as long as it remains inactive.
 - (2) Inactive NWD that is accessed infrequently for purposes such as inventory will continue to be considered inactive.
- c. When inactive NWD is retrieved for use, it must be reviewed and re-marked in accordance with the requirements of this Manual and DOE O 471.X-Y.
- d. All NWD documents¹ that are to be transmitted to the Department of Defense (DoD) also must be marked as Critical Nuclear Weapons Design Information, if required by criteria established by DoD.

3. ACCESS ELIGIBILITY AND APPROVALS. To be authorized access to NWD, an employee or contractor must have an appropriate clearance (see Appendix A) and a valid need to know.

- a. Access to Sigmas 1, 3, 3V, 4, 11, 12, 13, and/or 20 NWD.
 - (1) Within the Department of Energy and National Nuclear Security Administration.
 - (a) Employees and contractors must obtain authorization to access Sigma 1, 3, 3V, 4, 11, 12, or 13 from the head of their Headquarters or field element through the Sigma access authorization officials for their organizations.

¹Written or printed information; removable automated data processing media (diskettes, tapes, cards, etc.); charts; maps; paintings; drawings; engravings; sketches; photographic prints; exposed or developed film; working notes and papers; reproductions of such things by means or process; and sound and video recordings by magnetic, optical, or any other electronic means. (Source: Appendix E.)

- (b) Sigma 1, 3, 3V, 4, 11, 12, or 13 access authorizations must be documented in the NNSA Weapon Data Access Control System (WDACS) within 1 working day of the initial access.
- (c) Access to Sigma 20 NWD.
 - 1 NNSA and DOE employees and contractors at Headquarters must obtain access authorization from the NNSA Headquarters Sigma 20 Program Coordinator (Sigma 20 PC).
 - 2 Employees and contractors in NNSA field elements must obtain access authorization from the Sigma 20 PC through their organization's Sigma 20 Site Coordinator (Sigma 20 SC).
 - 3 Employees and contractors in non-NNSA Departmental field elements and NNSA and DOE employees and contractors in organizations that do not have a Sigma 20 SC must obtain access authorization from the Sigma 20 PC.
 - 4 Access authorizations must be approved and documented in WDACS before access to any Sigma 20 NWD.

NOTE: Currently, the Office of Scientific and Technical Information (OSTI) is organizationally under the Office of Science, not in the NNSA organization, and not listed as part of the NWC per DOE 5600.1, *Management of the Department of Energy Weapon Program and Weapon Complex*, dated 6-27-79. As a result, it would be extremely difficult for OSTI to implement this Manual and DOE O 471.X in a non-NNSA capacity. Thus, for the purposes of NWD management and control, OSTI is authorized the same access privileges as if it were part of NNSA.

- (2) Outside DOE and NNSA.
 - (a) Employees of other Government agencies and their contractors and Congress and congressional staff who require access to any NWD category should contact their DOE or NNSA counterparts to serve as sponsors within the Department or NNSA. Such sponsors will coordinate with their organizational Sigma Access Authorization Officials or the manager, CCID, for assistance with requests.
 - (b) Requests for access to Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD must be approved by the manager, CCID, and documented in WDACS prior to access to any NWD in these categories.

- (c) Requests for access to Sigma 20 NWD must be approved by the Assistant Deputy Administrator for Military Applications and Stockpile Operations, in coordination with the Sigma 20 PC and documented in WDACS before access to any Sigma 20 NWD.

Note: Sigma 20 NWD is rarely disseminated outside the NWC.

- (d) Government and non-Government personnel of other nations are authorized access to U.S. Government NWD as permitted under agreements for cooperation and as authorized by statutory determinations. Such personnel that require access to any NWD category should contact their DOE or NNSA counterparts to serve as sponsors within the Department or NNSA. Such sponsors will coordinate with their organizational Sigma Access Authorization Officials or the manager, CCID, for assistance with requests.

b. Visits.

- (1) To be authorized approval for a visit that involves access to NWD, a requestor must—
 - (a) have an appropriate clearance, a verified Sigma access authorization, and a valid need to know and
 - (b) submit a Request for Visit or Access Approval (DOE F 5631.20, or its successor, which is available in a fillable form at www.directives.doe.gov/forms/5000.html).
- (2) Extending visit authorizations.
 - (a) Access authorizations for visits involving Sigma 1, 3, 3V, 4, 11, 12, 13, and/or 20 NWD may be extended for periods not to exceed 1 year.
 - (b) Extension of access authorizations requires approval in writing by the head of the requestor's HQ or field element and the Sigma 20 PC and must be updated on WDACS annually.

c. Transmission. DOE M 471.2-1C *Classified Matter Protection and Control Manual* (CMPC Manual), dated 4-17-01, or its successor, and local classified matter protection and control procedures provide general requirements for transmitting NWD. Any additional requirements can be found in Chapters II and IV of this Manual. Before transmitting NWD, the transmitter must ensure that the recipient—

- (1) is appropriately cleared and has a valid need to know;

- (2) has a documented access authorization, via WDACS, for the Sigma categories being transmitted;
- (3) has a classified mail channel (see DOE F 470.2, Facility Data and Approval Record (FDAR), or its successor) for transmittals of classified documents; and
- (4) has approved storage facilities for safeguarding the information, as verified on the Safeguards and Security Information Management System.

4. DOCUMENTING AND CERTIFYING ACCESS AUTHORIZATIONS.

- a. The Request for Visit or Access Approval (DOE F 5631.20, or its successor) will be used to document requests and approvals for authorization to access NWD. Each form must be signed by, for, or in the name of a designated approving official, as identified above and/or in DOE O 471.X.
- b. Requests for access to cross-certified meetings by DoD and its contractors, other Government agencies and their contractors, and DOE participants must contain the required certification information, as applicable. These certifications are valid only for the dates of the specified meetings.

5. WEAPONS DISPLAY VAULTS. Procedures for access to nuclear weapon display vaults are included in Attachment 4.

6. MULTIPLE SIGMA CATEGORIES.

- a. Documents.
 - (1) When a document contains NWD controlled under multiple Sigma categories, excluding Sigma 20 (i.e., 1, 3, 4, 11, 12, and/or 13), the rules (access, handling, storage, transmission, etc.) for the most restrictive Sigma category must be followed.
 - (2) When a document contains NWD controlled under multiple Sigma categories that include Sigma 20, the rules for Sigma 20 must be followed.
- b. Access Authorizations. Access authorization to multiple Sigma categories is permitted; however, every Sigma category must be identified (e.g., Sigmas 1, 3, 3V, 4, 11, 12, and 13; Sigmas 1 and 20). In other words, having access authorization to Sigmas 1, 3, and 4, does not automatically entitle an individual to access to Sigma 11 and/or Sigma 12. Likewise, if an individual has access authorization for Sigmas 1 and 3, he/she cannot view a document that contains “NWD–Sigmas 1, 4.”

CHAPTER II. SIGMAS 1, 3, 3V, 4, 11, 12, AND 13

1. BACKGROUND AND DESCRIPTIONS. Sigmas 1, 3, 3V (Visual), 4, 11, 12, and 13 are categories of NWD associated with specific aspects of nuclear weapons (e.g., theory of operation and inertial confinement fusion). Following are descriptions of each category.
 - a. Sigma 1: Theory of Operation. Theory of operation (hydrodynamic and nuclear), complete or partial design of thermonuclear weapons or their unique components. Theory of operation, complete or partial design of fission weapons or their unique components. This includes the high explosive system with its detonators and firing unit, pit system, and nuclear initiation system.
 - b. Sigma 3: Manufacturing and Utilization Information. Manufacturing and utilization information not comprehensively revealing the theory of operation or design of the physics package. Complete or partial design and operation of non-nuclear components, but only information as prescribed below for nuclear components. Utilization information necessary to support the stockpile-to-target sequence. Information includes—
 - general external weapon configuration of reentry bodies/vehicles, including size, weight, and shape;
 - environmental behavior, fuzing, ballistics, yields, and effects;
 - nuclear components or subassemblies that do not reveal theory of operation or significant design features;
 - production and manufacturing techniques relating to nuclear parts or subassemblies that do not reveal theory of operation or significant design features;
 - anticipated and actual strike operations;
 - stockpile quantities or production rates of nuclear weapons including production rates and/or stockpile quantities of nuclear weapons components which reveal stockpile quantities or production rates of nuclear weapons;
 - general studies not directly related to the design or performance of specific weapons or weapons systems (e.g., reliability studies, fuzing studies, damage studies, aerodynamic studies); and
 - chemistry, metallurgy, and processing of materials peculiar to the field of atomic weapons or nuclear explosive devices.

- c. Sigma 3V: Visual. “Visual only” access to assemblies, components, materials, and/or processes that contain Sigma 3 NWD. Sigma 3V access does not authorize discussion or explanation of the product, process, material, or component.
- d. Sigma 4: Nuclear Weapon and Nuclear Explosive Device Testing. Information inherent in preshot and postshot activities necessary in the testing of atomic weapons or devices. Information includes—
- logistics, administration, and participation by other organizations;
 - special construction and/or equipment used;
 - effects and safety; and
 - purposes of tests and the general nature of explosives tested, including expected or actual yields and conclusions derived from tests, but excluding design features.

Note: The theory of operation and the design of such nuclear weapons and nuclear explosive devices are specifically excluded.

- e. Sigma 11: Inertial Confinement Fusion Technology. Information concerning inertial confinement fusion that reveals or is indicative of weapons data.
- f. Sigma 12: Nuclear Directed Energy Weapon Design. Complete theory of operation, complete design information, or partial design information revealing either sensitive design features or how the energy conversion takes place for the nuclear energy converter, energy director, or other nuclear directed energy weapons systems or components outside the envelope of the nuclear source but within the envelope of the nuclear directed energy weapon.
- g. Sigma 13: Nuclear Directed Energy Weapon Effects. Manufacturing and utilization information and output characteristics for nuclear energy converters, directors, or other nuclear directed energy weapon systems or components outside the envelope of the nuclear source, not comprehensively revealing the theory of operation, sensitive design features of the nuclear directed energy weapon, or how the energy conversion takes place. Information includes—
- general, external weapons configuration and weapon environmental behavior characteristics, yields, and effects;
 - component or subassembly design that does not reveal complete theory of operation or significant comprehensive design features of nuclear directed energy weapons; and
 - production and manufacturing techniques related to components or subassemblies of nuclear directed energy weapons.

2. PROCEDURES FOR RESTRICTING ACCESS AND LIMITING DISTRIBUTION. As with all NWD, the keystone to access control for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD is need to know. Only those individuals with the appropriate security clearances, Sigma access authorizations, and valid needs to know are permitted access to these categories of NWD.
 - a. Personnel Authorized Sigma 1, 3, 3V, 4, 11, 12, and/or 13 Access must possess a clearance level as outlined in Appendix A.
 - (1) Within the Department of Energy (DOE), the National Nuclear Security Administration (NNSA), and the Office of the Assistant to the Secretary for Defense (OATSD) [Nuclear, Chemical, & Biological Defense Programs (NCB)], the appropriate local managers (e.g., heads of HQ and field elements) approve access to Sigma 1, 3, 3V, 4, 11, 12, and/or 13 NWD for personnel under their jurisdictions, through their appointed Sigma access authorization officials.
 - (a) Access authorizations must be documented in the NNSA WDACS.
 - (b) When personnel going to other locations require Sigma 1, 3, 3V, 4, 11, 12, and/or 13 access, the visit documentation (see Chapter I, paragraph 3, of this Manual) will indicate the required Sigma categories.
 - (2) Individuals from Government agencies outside DOE, NSA, and OATSD (NCB) who are visiting DOE or NNSA facilities will be given access to Sigma 1, 3, 3V, 4, 11, 12, and/or 13 NWD only with prior approval of CCID. Such individuals must request access to Sigma 1, 3, 3V, 4, 11, 12, and/or 13 NWD using DOE F 5631.20 or its successor.
 - b. Additional Provisions.
 - (1) Documents containing Sigma 1, 3, 4, 11, 12, and/or 13 NWD will not be transferred to Agencies outside DOE and NNSA unless the recipient is authorized access to the appropriate Sigma categories; said access authorization is documented in WDACS; the recipient maintains appropriate control systems, storage, and handling procedures equivalent to the requirements set forth in this Manual; and an established mail channel is within the Safeguards and Security Information Management System.
 - (2) Continuing access authorizations to Sigma 1, 3, 3V, 4, 11, 12, and/or 13 NWD is allowed subject to approval by the head of the local DOE, NNSA, or DoD HQ or field element.

3. RECEIPT AND TRANSMISSION. The receipt and transmission requirements for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD are the same as for other classified information and can be found in the CMPC Manual (or successor).
4. MARKING.
 - a. This requirement applies only to matter containing NWD created or reviewed subsequent to the effective date of this Manual. NWD that was created before the effective date of this Manual and has been filed or placed in appropriate storage is not required to be reviewed and re-marked, if appropriate, while in the files/storage or when retrieved from the files/storage for reference, inventory, or similar purposes as long as it will be returned to the files/storage and is not accessible by individuals who are not authorized access to such NWD.
 - b. Basic marking requirements found in the CMPC Manual (or successor) must be followed for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD, with the following additions.
 - (1) The words “Nuclear Weapon Data” and the Sigma category or categories must be included on the cover page and the title page (or first page of text following the cover page if there is no title page).
 - (2) The following caveat must be placed on the first page with text (whether cover page, title page, or the first page of the document).

**This document contains nuclear weapon data (NWD)
that is under the control of the Department of
Energy/National Nuclear Security Administration. This
document may only be transferred to parties that are
authorized access to NWD.**
5. IN USE.
 - a. The in-use requirements found in the CMPC Manual (or successor) must be followed for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD.
 - b. See paragraph 8 of this chapter for in-use requirements for electronic media.
6. STORAGE REQUIREMENTS. The storage requirements found in the CMPC Manual (or successor) must be followed for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD.
7. CONTROL SYSTEMS.
 - a. The control systems requirements found in the CMPC Manual (or successor), must be followed for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD.

- b. In addition, all existing electronic media or documents containing NWD that are accountable at the time this Manual is approved (e.g., Sigma 2) will continue to be accountable until said NWD is reviewed and re-marked and an accountability determination is made consistent with the requirements in this Manual.

8. COMPUTER SYSTEMS.

- a. Sigma 1, 3, 3V, 4, 11, 12, and/or 13 NWD residing on computer systems should be protected from unauthorized access in a manner that is consistent with the protection of the same information when it is in other formats (e.g., paper or microform).
- b. Controls must be enacted, where required, to be consistent with controls in place for data in other formats. Where possible, file names should indicate the Sigma category or categories of the contents.
- c. Specific baseline requirements contained in the *Classified Information Systems Security Manual*, DOE M 471.2-2, dated 8-3-99, (or successor), must be followed for Sigmas 1, 3, 3V, 4, 11, 12, and 13 NWD, with the following additions.
 - (1) Sigma categories solely impact the level of concern for confidentiality.
 - (2) Secret Restricted Data (S/RD) associated with the Sigma 1 category must be protected at a high level of concern for confidentiality. S/RD systems with information associated with the Sigma 3, 4, 11, 12, or 13 category must be protected at least at a medium level of concern for confidentiality.

CHAPTER III. RESERVED

CHAPTER IV. SIGMA 20

1. BACKGROUND AND DESCRIPTIONS.

Sigma 20, Crude or Simple Improvised Nuclear Device Concepts and Designs, is a special category of NWD pertaining to crude or simple improvised nuclear device (IND) concepts or designs that was part of the Sigma 1 and Sigma 2 categories under the old numbering system. Sigma 20 concepts and designs reveal significant design “shortcuts” that greatly enhance an adversary’s ability to construct a crude nuclear weapon. These designs and concepts require special consideration before dissemination for such threats as inadvertent (accidental) disclosure to unauthorized persons, insider threats to special nuclear material security, and international material security. Generally, IND concepts or designs not requiring Sigma 20 protection include those based on present or former unmodified stockpile weapons, approved yet never deployed military designs, nuclear explosive devices used within the U.S. testing program, and unmodified foreign stockpile weapons.

The Deputy Administrator for Defense Programs has determined that crude or simple IND information will have increased protection, including validation of need-to-know on an individual basis, publication reviews by designated officials, and specialized handling procedures as described herein. All Sigma 20 NWD will be classified, as a minimum, at the Secret level per broad classification guidance.

Newly created S/RD Sigma 1 documents and/or hardware that contains simple IND concepts and designs must be reviewed and properly marked and the Sigma category upgraded, if appropriate. Existing S/RD Sigma 1 or 2 documents/hardware that was created before the effective date of this Manual, is inactive and has been filed or placed in appropriate storage is not required to be reviewed or re-marked as long as the documents/hardware remain inactive and are not accessible by individuals who are not authorized access to Sigma 20 NWD.

The number of documents and hardware/mockups containing Sigma 20 concepts or designs must be kept to the minimum necessary for operational requirements. The Improvised Nuclear Device Evaluation and Control Committee (INDECC) has been established to address questions or issues related to Sigma 20 NWD categorization, protection, and dissemination if disagreements arise. The INDECC can be contacted via the Sigma 20 PC.

The design laboratory responsible for the IND-related research, evaluation, or analysis is responsible for identifying the specific design information as being Sigma 20. This action is taken in conjunction with or referred to the organization’s designated evaluation official, Sigma 20 site coordinator (Sigma 20 SC), or, if a new development or categorization is in dispute, to the INDECC for final resolution. If another organization

(including non-NNSA national laboratories or non-DOE entities) is identified as having created such information, then the Sigma 20 PC or INDECC will coordinate with said organization to determine equivalent control measures as described herein.

2. PROCEDURES FOR RESTRICTING ACCESS AND LIMITING DISTRIBUTION.

Only those individuals with DOE Q security clearances or, in Agencies outside DOE, the equivalents based on Single Scope Background Investigations (see Appendix A); confirmed Sigma 20 access authorizations; and valid needs to know will be permitted access to this category of NWD. (Note: Sigma 20 NWD rarely is disseminated outside DOE and NNSA or selected other Government agencies, including DoD.)

a. Within the Department of Energy and National Nuclear Security Administration.

- (1) Each DOE or NNSA element/activity that regularly produces or handles Sigma 20 NWD will nominate a Sigma 20 SC who will be responsible for ensuring compliance with the procedures in this Manual for that element/activity. The Sigma 20 SC must have sufficient stature in the organization to ensure that effective methods for implementing these procedures are established and in use within the element or activity.
- (2) The name of each Sigma 20 SC will be provided to the Sigma 20 PC.
 - (a) The Sigma 20 PC must confirm Sigma 20 SCs, in writing.
 - (b) The Sigma 20 PC will maintain a current list of the Sigma 20 SCs and periodically distribute a consolidated list to the Sigma 20 SCs and others as required.
- (3) The Sigma 20 SC for each element/activity will approve Sigma 20 access for element/activity personnel on an individual basis.
 - (a) The Sigma 20 PC may institute a number allocation, or billet structure, to allow for unimpeded access up to a specified level.
 - (b) An individual's authorization to access Sigma 20 NWD must be documented in WDACS before access to any Sigma 20 NWD.
 - (c) Each Sigma 20 SC will be responsible for the accuracy and timeliness of his/her site's/activity's WDACS information.
- (4) The Sigma 20 PC will be responsible for approving access to Sigma 20 of DOE and NNSA HQ personnel. The Sigma 20 PC will ensure the accuracy and timeliness of information in WDACS for all DOE and NNSA HQ personnel.

b. Outside the Department of Energy and National Nuclear Security Administration.

- (1) Individuals from outside DOE and NNSA may be given access to Sigma 20 NWD with the recommendation of the Sigma 20 PC and with approval of the Assistant Deputy Administrator for Military Application and Stockpile Operations.
 - (a) Such individuals must request access to Sigma 20 NWD using DOE F 5631.20 or its successor.
 - (b) The Sigma 20 PC will be responsible for the accuracy and timeliness of information in WDACS for any non-DOE/non-NNSA personnel authorized access to Sigma 20 NWD.
- (2) Access to Sigma 20 NWD by DoD personnel requires prior written approval by the Assistant Deputy Administrator for Military Applications and Stockpile Operations. Requests to NNSA for DoD personnel access to Sigma 20 NWD require approval through the Office of the Assistant to the Secretary of Defense, Nuclear, Chemical, and Biological Defense Programs, before being submitted to NNSA.

c. Additional Provisions.

- (1) Documents and/or hardware containing Sigma 20 NWD will not be transferred to Agencies outside NWC without written approval of the Assistant Deputy Administrator for Military Application and Stockpile Operations (with concurrence by the Sigma 20 PC and the appropriate CMPC managers).
- (2) Dissemination of Sigma 20 NWD outside DOE and NNSA requires that the recipient maintain accountability, storage, and handling procedures equivalent to the requirements set forth in this Manual. Further dissemination of Sigma 20 NWD is not delegated to non-DOE and non-NNSA elements and/ or activities without approval from the originating NNSA program office and the NNSA HQ Sigma 20 PC.
- (3) Continuing access authorizations to Sigma 20 NWD is allowed only in special situations justified in writing to and approved by the Sigma 20 PC. The sponsoring organization is required to inform the Sigma 20 PC as access needs change.

3. RECEIPT AND TRANSMISSION. The receipt and transmission requirements found in the CMPC Manual (or successor) must be followed for Sigma 20 NWD, with the following additions.

- a. Sigma 20 must be addressed as “To be opened by addressee only.”

- b. Only personnel with the appropriate clearances, confirmed Sigma 20 access authorizations, and valid needs to know may be designated as agents for the addressee.

4. MARKING.

- a. This requirement applies to all Sigma 20 NWD.
- b. Basic marking requirements found in the CMPC Manual (or successor) must be followed for Sigma 20 documents, with the following additions.
 - (1) The words “Nuclear Weapon Data” and the Sigma category or categories must be included on the cover page and title page (or the first page of text if there is no title page).
 - (2) The following caveat should be placed on the first page with text (whether cover page, title page, or the first page of document text).

**This document contains nuclear weapon data (NWD)
that is under the control of the National Nuclear
Security Administration. This document may only be
transferred to individuals that are authorized access to
NWD.**

- (3) All Sigma 20 documents must have cover sheets that contain unique and distinctive words specifying that Sigma 20 access authorization is required for viewing contents. The words “Nuclear Weapon Data” and “SIGMA 20” and the following words should be incorporated into current General Services Administration coversheets (e.g., stickers, overprint).

**WARNING:
DO NOT PROCEED FURTHER UNLESS YOU HAVE
BEEN AUTHORIZED ACCESS BY THE
SIGMA 20 SITE COORDINATOR.**

**THE ATTACHED DOCUMENT MAY NOT BE
REPRODUCED OR DISSEMINATED BEYOND
ORIGINAL DISTRIBUTION WITHOUT APPROVAL OF
THE ORIGINATOR, ORIGINATING AGENCY
SIGMA 20 SITE COORDINATOR, OR THE
SIGMA 20 PROGRAM COORDINATOR.**

**HANDLING, STORAGE, REPRODUCTION, AND
DISPOSITION OF THE ATTACHED DOCUMENT MUST
BE IN ACCORDANCE WITH APPLICABLE EXECUTIVE**

**ORDERS, STATUTES, AGENCY IMPLEMENTING
REGULATIONS AND DOE M 471.X-Y SANCTIONS.**

(See Appendix C for examples.)

- (4) For documents that contain multiple Sigma categories, all Sigma categories must be included in the caveat markings.

For example—

NUCLEAR WEAPONS DATA—SIGMAS 11 and 20

- (5) Documents containing Sigma 20 will carry the following additional handling instruction.

This document may not be reproduced or disseminated beyond original distribution without approval of the originator, originating Agency's Sigma 20 site coordinator, and/or the NNSA HQ Sigma 20 program coordinator.

5. IN USE.

- a. The in-use requirements found in the CMPC Manual (or successor) do not apply to Sigma 20 NWD. In-use Sigma 20 NWD must be constantly attended by or under the control of a person with the appropriate clearance, a confirmed Sigma 20 access authorization, and a valid need to know.
- b. See paragraph 9, below, for electronic media in-use requirements.

6. STORAGE REQUIREMENTS. The storage requirements found in the CMPC Manual (or successor) must be followed for Sigma 20 documents, with the following additions.

- a. Top Secret Sigma 20 documents must be stored in vaults or vault-type rooms, physically separated from other non-Sigma-20 documents, and locked in approved security containers.
- b. Secret Sigma 20 documents within vaults or vault-type rooms must be physically separated from other non-Sigma-20 documents and locked in appropriate containers (i.e., file cabinets, desks, or approved security containers).
- c. Secret Sigma 20 documents within Limited Areas but outside of vaults or vault-type rooms must be physically separated from other non-Sigma-20 documents and locked in approved security containers.
- d. Only personnel authorized Sigma 20 access may have access to security containers (and their combinations) that have Sigma 20 content. Sigma 20

documents will not be stored in open storage mode in vaults or vault-type rooms unless all personnel with access to such vaults/vault-type rooms have access to Sigma 20.

- e. “Nonstandard Methods of Storage” are prohibited for Sigma 20 documents.
7. CONTROL SYSTEMS. The control systems requirements found in the CMPC Manual (or successor), must be followed for Sigma 20 NWD. Specifically, only Top Secret Sigma 20 NWD must be placed in accountability systems.
8. COMPUTER SYSTEMS.
- a. Sigma 20 NWD residing on computer systems should be protected from unauthorized access in a manner that is consistent with the protection of the same information when it is in other formats.
 - b. Controls should be enacted, where required, to be consistent with controls in place for NWD in other formats (e.g., paper). Where possible, file names should indicate the Sigma category or categories.
 - c. Specific baseline requirements contained in DOE M 471.2-2 (or successor) must be followed for Sigma 20 NWD, with the following additions.
 - (1) Sigma categories solely impact the level of concern for confidentiality.
 - (2) S/RD associated with Sigma 20 must be protected at a high level of concern for confidentiality.
 - (3) Type II or I encryption must be used to provide need-to-know protection for Sigma 20 NWD stored on computer systems already accredited to process this information in accordance with DOE M 471.2.2 in all cases where personnel not having documented Sigma 20 access authorizations have access to the systems (e.g., administrators).

**APPENDIX A. LEVEL OF CLEARANCE EQUATED TO
ELIGIBILITY¹ FOR SIGMA ACCESS**

Clearance Level	Sigma Categories (Secret Restricted Data)			
	1,3,3V,4, 11,12,13	14	15	20
DOE “Q”	X	X	X	X
DoD Top Secret/Secret/critical nuclear weapons design information (CNWDI) ²	X	X	X	X
NASA Top Secret & Secret ³	X			
DoD Secret/CNWDI ⁴	X			
DoD Top Secret & Secret	X ⁵			
DOE “L”	X ⁶			

¹Eligibility *DOES NOT* equate to need to know.

²Based on Single Scope Background Investigation.

³Access only for work associated with the space program.

⁴Based on final national Agency check with local agency check and credit check.

⁵Only for information that is not CNWDI.

⁶Access includes up to and including Secret/Formerly Restricted Data only.

APPENDIX B. PROTECTION REQUIREMENTS

Protection Requirements	Sigma 1	Sigma 3	Sigma 4	Sigma 11	Sigma 12	Sigma 13	Sigma 14	Sigma 15	Sigma 20
Receipt and Transmission									
Same as requirements in DOE M 471.2-1C (or successor)	X	X	X	X	X	X	X	X	X
Must be addressed “To be opened by addressee only”							X	X	X
Designated agents must have appropriate clearances, appropriate Sigma access authorizations, and needs to know							X	X	X
Marking									
Basic markings covered in DOE M 471.2-1C (or successor)	X	X	X	X	X	X	X	X	X
Add appropriate Sigma category/categories as caveat markings above category marking	X	X	X	X	X	X	X	X	X
Additional handling instructions							X	X	X
In Use									
Same as requirements in DOE M 471.2-1C (or successor)	X	X	X	X	X	X		X	
Constantly attended by or under control of individual with proper access authorization and need to know							X		X
Storage									
Same as requirements in DOE M 471.2-1C (or successor)	X	X	X	X	X	X	X	X	X
Top Secret documents must be stored in a vault or vault-type room, physically separated from other non-Sigma documents, and locked in an approved security container							X		X
Secret documents within a vault or vault-type room must be physically separated from other non-Sigma documents and locked in an appropriate container (i.e., file cabinet, desk, or approved security container)							X		X
Secret documents within the Limited Area but outside of a vault or vault-type room must be physically separated from other non-Sigma documents and locked in an approved security container							X		X
Documents within a vault or vault-type room, should be physically separated from other non-Sigma documents and filed or otherwise organized based on need to know and programmatic requirements								X	

DOE M 471.X-Y
DRAFT XX-XX-03

Appendix B
B-1

APPENDIX B. PROTECTION REQUIREMENTS (continued)

Protection Requirements	Sigma 1	Sigma 3	Sigma 4	Sigma 11	Sigma 12	Sigma 13	Sigma 14	Sigma 15	Sigma 20
Storage (continued)									
Documents within the Limited Area but outside of a vault or vault-type room must be physically separated from other non-Sigma documents, filed or otherwise organized based on need to know and programmatic requirements, and locked in an approved security container								X	
“Nonstandard Methods of Storage” prohibited							X	X	X
Control Systems/Accountability									
Same as requirements in DOE M 471.2-1C (or successor)	X	X	X	X	X	X	X	X	X
Annual inventory							X		X
Report, if requested							X		X
Computer Systems									
Same as requirements in DOE M 471.2-2 (or successor)	X	X	X	X	X	X	X	X	X
High Level of Concern for Confidentiality	X						X	X	X
Medium Level of Concern for Confidentiality		X	X	X	X	X			
Nuclear weapon data, when not in use, must be protected using Type II or better encryption							X	X	X

DOE M 471.X-Y
DRAFT XX-XX-03

Appendix C
C-1 (and C-2)

APPENDIX C. COVER SHEETS

Sigma 20 (Example)

SECRET
RESTRICTED DATA

THIS IS A COVER SHEET

FOR CLASSIFIED INFORMATION

WARNING:

**DO NOT PROCEED FURTHER UNLESS YOU HAVE BEEN
AUTHORIZED ACCESS BY THE SIGMA 20 SITE
COORDINATOR.**

**THE ATTACHED DOCUMENT MAY NOT BE REPRODUCED OR
DISSEMINATED BEYOND ORIGINAL DISTRIBUTION
WITHOUT APPROVAL OF THE ORIGINATOR OR
ORIGINATING AGENCY SIGMA 20 SITE COORDINATOR AND
THE SIGMA 20 PROGRAM COORDINATOR. HANDLING,
STORAGE, REPRODUCTION, AND DISPOSITION OF THE
ATTACHED DOCUMENT MUST BE IN ACCORDANCE WITH
APPLICABLE EXECUTIVE ORDERS, STATUTE(S), AGENCY
IMPLEMENTING REGULATIONS AND DOE MANUAL 471.X-Y.
SANCTIONS.**

SIGMA 20

(This cover sheet is unclassified.)

SECRET

704-101
NSN 7540-01-213-7902

STANDARD FORM 704 (8-85)
Prescribed by GSA/ISCC
32 CFR 2003

APPENDIX D. ACRONYMS

3V	3 Visual (referring to a Sigma category)
CCID	Classified and Controlled Information Division, NNSA Service Center
CMPC	Classified Material Protection and Control
CNWDI	Critical Nuclear Weapons Design Information
CRD	Contractor Requirements Document
DOE	Department of Energy
DoD	Department of Defense
HQ	Headquarters
IND	improvised nuclear device
INDECC	Improvised Nuclear Device Evaluation and Control Committee
NNSA	National Nuclear Security Administration
NWC	nuclear weapons complex
NWD	nuclear weapon data
OSTI	Office of Scientific and Technical Information
PC	program coordinator
RD	Restricted Data
SC	site coordinator
S/RD	Secret Restricted Data
WDACS	Weapon Data Access Control System

APPENDIX E. DEFINITIONS

Continuing Access Authorization—An administrative determination for classified visits that an individual is eligible for access to classified data for a period not to exceed one year.

Critical Nuclear Weapons Design Information (CNWDI)—A DoD marking designating Top Secret or Secret Restricted Data revealing the theory of operation or design of the components of a thermonuclear or implosion-type fission bomb, warhead, demolition mutations, or test device.

Documents—Written or printed information; removable ADP media (diskettes, tapes, cards, etc.); charts; maps; paintings; drawings; engravings; sketches; photographic prints; exposed or developed film; working notes and papers; reproductions of such things by any means or process; and sound and video recordings by magnetic, optical, or any other electronic means.

Formerly Restricted Data (FRD)—Classified information jointly determined by DOE and DoD to be (1) related primarily to the military use of atomic weapons and (2) adequately safeguarded as National Security Information and removed by DOE from the Restricted Data category under Section 142d of the Atomic Energy Act of 1954, as amended.

Sigma 20 Program Coordinator—The NNSA Headquarters program manager responsible for the coordination and management of Sigma 20 NWD within the NWC and with agencies outside of the NWC.

Inactive—The status of a document that is in storage and retention.

Limited Area – A type of Security Area having boundaries defined by physical barriers, used for the protection of classified matter and/or Category III quantities of special nuclear material, where protective personnel or other internal controls can prevent access by unauthorized persons to classified matter or special nuclear material.

Matter—Any combination of documents or materials.

Need to Know—(1) A determination made by an authorized holder of classified information that a prospective recipient requires access to specific classified information to perform or assist in a lawful and authorized governmental function. (2) A determination made by the possessor of classified information that a prospective recipient has a requirement for access to, knowledge of, or possession of the classified information to perform tasks or services essential to the fulfillment of a classified contract or program. (3) A determination by a person having responsibility for classified information that a proposed recipient's access to such classified information is necessary in the performance of official or contractual duties of employment.

Nonstandard Methods of Storage—A minimum protection level within a Limited Area in which matter whose size, weight, construction, or other characteristics precludes storage in a locked vault, vault-type room, or General Services Administration-approved secure storage

repository. By this means, local safeguards and security authorities shall base their protection measures upon the results of a documented vulnerability analysis that addresses the nature of the matter to be protected.

Nuclear Weapons Complex (NWC)—The NNSA organizations that design, manufacture, maintain, or test nuclear weapons or nuclear weapons components. Included are the NNSA Office of the Administrator, the NNSA Office of the Deputy Administrator for Defense Programs, the NNSA Service Center (SC), the Kansas City Site Office (KCSO), the Livermore Site Office (LSO), the Los Alamos Site Office (LASO), the Sandia Site Office (SSO), the Savannah River Site Office (SRSO), the Pantex Site Office (PSO), and the Y-12 Site Office (YSO) and their contractors, including subcontractors and suppliers. (See 50 U.S.C. 2471.)

Nuclear Weapon Data (NWD)—Restricted Data and Formerly Restricted Data within the atomic weapons program. Always concerns the design, manufacture, or utilization of nuclear weapons.

Official Use Only (OUO)—A designation identifying certain unclassified but sensitive information that may be exempt from public release under the Freedom of Information Act. (See DOE O 471.3, DOE M 471.3-1, and DOE G 471.3-1)

CAUTION: OUO was used as a security classification marking
from July 18, 1949–October 22, 1951.

Restricted Data (RD)—All data concerning design, manufacture, or utilization of atomic weapons; the production of special nuclear material; or the use of special nuclear material in the production of energy, but not data declassified or removed from the RD category pursuant to Section 142 of the Atomic Energy Act of 1954, as amended.

Safeguards and Security Information Management System—An automated system used to record site approvals, site administrative information, survey and inspection findings, and corrective actions.

Sigma 20 Site Coordinator—A facility or site representative responsible for all aspects concerning the management of the Sigma 20 NWD.

Single Scope Background Investigation—A background investigation consisting of record reviews and indices checks, a subject interview, and interviews with sources of information as specified in National Security Directive 63. This type of investigation is used as a basis for initially determining an individual's eligibility for Q access authorization, a Top Secret security clearance, or access to Sensitive Compartmented Information.

Site—A geographical area where one or more facilities are located.

Special Nuclear Material—Plutonium, uranium-233, uranium enriched in the isotope 235, and any other material which, pursuant to section 51 of the Atomic Energy Act of 1954, as amended,

has been determined to be special nuclear material, but does not include source material. It also includes any material artificially enriched by any of the foregoing, not including source matter.

Weapon Data Access Control System (WDACS)—A subsystem of the Departmental Personnel Security Database. It is an online, interactive system that maintains a current file of all persons who have been authorized access to which category/categories of NWD. As the WDACS database is updated daily, this information is made available to the proper sites so access can be authorized and a record made of the visit or authorized mail/shipping channel. WDACS provides remote site users with a data inquiry capability for their site and also transmits updated database information via a secure web page link.

DOE ORGANIZATIONS TO WHICH DOE M 471.X-Y IS APPLICABLE

Office of the Secretary
Chief Information Officer
Office of Civilian Radioactive Waste Management
Office of Congressional and Intergovernmental Affairs
Office of Counterintelligence
Departmental Representative to the Defense Nuclear Facilities Safety Board
Office of Economic Impact and Diversity
Office of Electric Transmission and Distribution
Office of Energy Assurance
Office of Energy Efficiency and Renewable Energy
Energy Information Administration
Office of Environment, Safety and Health
Office of Environmental Management
Office of Fossil Energy
Office of General Counsel
Office of Hearings and Appeals
Office of Independent Oversight and Performance Assurance
Office of the Inspector General
Office of Intelligence
Office of Management, Budget and Evaluation and Chief Financial Officer
National Nuclear Security Administration
Office of Nuclear Energy, Science and Technology
Office of Policy and International Affairs
Office of Public Affairs
Office of Science
Secretary of Energy Advisory Board
Office of Security
Office of Worker and Community Transition
Bonneville Power Administration
Southeastern Power Administration
Southwestern Power Administration
Western Area Power Administration

CONTRACTOR REQUIREMENTS DOCUMENT

DOE M 471.X-Y, *CONTROL OF AND ACCESS TO NUCLEAR WEAPONS DATA*

This Contractor Requirements Document (CRD) is issued to aid in the identification of requirements applicable to contractors. All requirements contained in DOE M 471.X-Y, *Control of and Access to Nuclear Weapon Data*, dated XX-XX-03, apply to contractors with access to nuclear weapon data (NWD). The requirements in this implementing CRD will flow down to all subcontractors with access to NWD.

SIGMA HISTORY

(Sigma Categories for Re-marking Documents Issued/Published Before this Manual)

Current	July 1, 1999 to Date of this Manual*	September 2, 1986 to Date of this Manual	August 1, 1980 to September 1, 1986	October 2, 1977 to July 31, 1980**	October 4, 1957 to October 1, 1977
DOE O 471.X & DOE M 471.X-Y	DOE M 452.4-1	DOE 5610.2, Change 1	DOE 5610.2	GAP IN ORDERS	AEC M Chapter 2108, Weapon Data, and Appendix
Sigma 1	N/A	Sigmas 1 & 2	Sigmas 1 & 2	?	Sigmas 1 & 2
Sigma 3	N/A	Sigmas 3, 5, 9, & 10	Sigmas 3, 5, 9, & 10	?	Sigma 3, Production and Stockpile Info., NCS & NCS
Sigma 4	N/A	Sigma 4	Sigma 4	No Comparable Sigma	No Comparable Sigma
Sigma 11	N/A	Sigma 11	Sigma 11	No Comparable Sigma	No Comparable Sigma
Sigma 12	N/A	Sigma 12	No Comparable Sigma	No Comparable Sigma	No Comparable Sigma
Sigma 13	N/A	Sigma 13	No Comparable Sigma	No Comparable Sigma	No Comparable Sigma
Sigma 14	Sigma 14	Sensitive Use Control Information (SUCI)	SUCI	No Comparable Sigma	No Comparable Sigma
Sigma 15	Sigma 15	SUCI	SUCI	No Comparable Sigma	No Comparable Sigma
Sigma 20	N/A	No Comparable Sigma	No Comparable Sigma	No Comparable Sigma	No Comparable Sigma

*Note: Sigmas 14 and 15 were first implemented via memorandum from Gene Ives, DASMASH, to B. Twining, AL, T. Vaeth, NVOO, J. Turner, OAK, B. Tarter, LLNL, S. Hecker, LANL, and P. Robinson, SNL; dated January 24, 1997; subject: Implementation of Weapon Data Categories for Sigmas 14 and 15.

**Note: The AEC Manual Chapter and Appendix 2108, Weapon Data, was cancelled on October 1, 1977, and DOE 5610.2, Control of Weapon Data, was not approved until August 1, 1980.

PROCEDURES FOR DISPLAY VAULT ACCESS

1. Vault access requires a “Q” clearance or equivalent (e.g., Department of Defense Top Secret/CNWDI clearance based on a Single Scope Background Investigation), confirmed access authorization for the appropriate Sigma categories, and a valid need to know.
2. Vault access will be authorized for a specified period of time (generally not to exceed one day) and may not be authorized for a continuing period, except for those individuals assigned responsibilities for maintenance and control of the vault or for specified individuals whose assignment necessitates recurrent access to the vault. This exception is for specific positions and authorization does not follow the individual to other assignments.
3. Displays that are not pertinent to the purpose of the weapon vault access will be shrouded or otherwise protected from view.
4. Adequate procedures are to be established by the cognizant headquarters or field office for maintaining adequate records to identify each individual authorized access to each vault. The records should identify the individual, organization, date of visit, a brief statement of purpose for access to the vault and the display presented.